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A Combined Intervention Model Comprising of Social Opportunity and Conventional Clinical Intervention for Mitigating Maladaptive Behaviour among People with Intellectual Disability

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Abstract

The present study evaluated the effect of a new intervention model on a selected group of people with intellectual disabilities. The intervention consisted of conventional transdisciplinary clinical and rehabilitation methods, along with the provision of social opportunities for engagement in the performing arts. Being a marginalised group, these individuals are often side-lined when it comes to opportunities to showcase their talents. Therefore, the provision of social opportunity was considered a significant component of the intervention in this study. The 120 participants were enrolled in a 12-month program of integrated training in performing arts, provision of social opportunities, and therapies, with a focus on meaningful social engagement. The BASIC-MR scale was used at three points: baseline, midterm, and final. ANOVA and paired t-tests were used to analyse the data. A significant reduction in maladaptive behaviour across domains is observed, with a substantial difference at the 0.05 level ($p < .05$). The findings indicate positive changes in behavioural regulation, social skills, and emotional stability in individuals with intellectual disabilities.

Keywords: *Social opportunity, Intellectual disability, Rehabilitation, Art Training, BASIC MR.*

Introduction

Individuals with intellectual disabilities (ID) demonstrate significant limitations in intellectual functioning and adaptive behaviours, which impact their conceptual, social, practical, and pragmatic skills. They often face associated challenges such as restlessness, hyperactivity, social withdrawal, inappropriate social skills and communication, vulnerability to exploitation, aggression, tantrums, and further social isolation. These issues can severely hinder their opportunities for social inclusion and overall quality of life.

Creating social opportunities can foster an environment that promotes the inclusion of people with ID. This approach not only enhances awareness and empathy among the general population but also encourages acceptance and accommodation of these individuals. Furthermore, facilitating such social opportunities serves as an advocacy program for those with ID.

In contrast, recent studies emphasise the importance of multidimensional, socially inclusive interventions that prioritise holistic development and growth. Andrews, Falkmer, Girdler,_2015 in their review paper

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thirteen studies were considered. In this review paper, a variety of study designs and interventions were reviewed. Except for one study, all other studies reported an increase in friendships; five reported an increase in recreation participation; and one reported an increase in quality of life and self-esteem.

Art-based interventions have direct implications for emotional regulation, communication, and social skills. Many studies show that performing arts can enhance cognitive functions such as memory, attention and focus, executive functions, language and communication, spatial–temporal skills, and problem-solving. Neuropsychological studies show that grey matter Volume increases in auditory, motor, and visuospatial brain regions among musicians (Gaser & Schlaug, 2003). Similarly, connectivity between the left and right hemispheres via the corpus callosum also increases with music training (Schlaug et al., 1995). Besson et al. found that engagement in music improves verbal memory, executive functions, and even language processing (Besson et al., 2011). Similarly, dance helps activate motor, somatosensory, and vestibular regions—crucial for body awareness, coordination, and balance (Brown & Parsons, 2008).

The present study aimed to evaluate the outcomes of an integrated intervention model on behavioural changes among people with intellectual disability who availed themselves of social opportunities in the performing arts and concurrently received conventional transdisciplinary intervention comprising psychology, speech and language therapy, and physiotherapy. As a prelude to providing social opportunities, specific training was offered in various performing arts, including vocal and instrumental music, magic, dance, and fine arts.

Methodology

The study sample comprised 120 participants diagnosed with intellectual disability, aged 14–20 years. The study investigated a 12-month integrated intervention that included training in various performing arts, including music, musical instruments, fine arts, Indian classical dance, and magic. Along with the above training, the participants received rehabilitation therapies such as psychotherapy, behaviour modification, speech and language therapy, and physiotherapy.

Assessment for the study was conducted at three points. The results of the initial evaluation served as the study's baseline data. To assess and monitor the intervention's effects, midterm and final assessments were conducted every 6 months. The BASIC-MR tool, which evaluates nine major domains of relevant behaviour, was used. The BASIC-MR assesses violent and destructive behaviour, temper tantrums, misbehaviour with others, self-injurious behaviour, repetitive behaviour, odd behaviour, hyperactive and rebellious behaviour, antisocial behaviour, and fear.

Results

A repeated-measures ANOVA was used to examine the intervention's effects across the nine domains measured and to evaluate the impact of the 12-month integrated intervention across three assessment points—baseline, midterm, and final. The data were elicited using the BASIC-MR for nine behavioural domains. To determine the magnitude of change, pairwise comparisons were performed to identify changes across the assessment phases. Descriptive statistics relating to the data obtained and the results of inferential analysis (paired t-tests and repeated measures ANOVA) are presented in Table 1. Graphical representation of the changes in the mean scores on the different variables obtained by the participants across different measurement occasions (baseline, mid, and final) are depicted in figures 1 to 9.

Table 1. Descriptive statistics and inferential analyses for nine behavioural domains across baseline, mid, and final assessments (N = 120).

Behavioural domain	Mean and SD			Results of Paired t-tests			Results of Repeated Measures ANOVA	
	Baseline	Mid	Final	Baseline Vs Mid	Mid Vs Final	Baseline Vs Final	F	Etasq.
Violent and Distructive Behavior	4.67 (5.79)	3.63 (5.02)	3.03 (5.01)	5.07 (p<0.001)	2.33 (p<0.05)	4.67 (p<0.001)	17.89 (p<0.001)	0.130
Temper Tantrums	1.48 (1.82)	1.23 (1.66)	0.82 (1.47)	4.29 (p<0.001)	4.02 (p<0.001)	5.48 (p<0.001)	23.56 (p<0.001)	0.16
Misbehaves with others	2.10 (2.55)	1.90 (2.33)	1.50 (2.20)	3.21 (p<0.01)	3.94 (p<0.001)	4.78 (p<0.001)	18.73 (p<0.001)	0.13
Self-Injuring Behavior	2.10 (3.06)	1.43 (2.65)	1.38 (2.58)	4.57 (p<0.001)	0.37 (p>0.05)	3.86 (p<0.001)	12.03 (p<0.001)	0.09
Repetative Behavior	1.95 (2.54)	1.80 (2.43)	1.29 (2.06)	2.41 (p<0.05)	3.88 (p<0.001)	4.72 (p<0.001)	17.70 (p<0.001)	0.12
Odd Behavior	2.86 (2.70)	2.48 (2.45)	2.33 (2.49)	4.19 (p<0.001)	1.00 (p>0.05)	3.00 (p<0.05)	7.018 (p<0.01)	0.05
Hyperactive & Rebellious behaviour	4.15 (3.95)	3.39 (3.31)	2.46 (3.22)	5.62 (p<0.001)	5.40 (p<0.001)	7.43 (p<0.001)	43.16 (p<0.001)	0.26
Anti-Social Behaviour	0.85 (1.37)	0.72 (1.21)	0.68 (1.20)	2.73 (p<0.01)	0.74 (p>0.05)	2.37 (p<0.05)	4.59 (p<0.05)	0.03
Fears	3.13 (2.80)	2.99 (2.73)	2.69 (2.49)	2.17 (p<0.05)	2.77 (p<0.05)	3.69 (p<0.001)	10.10 (p<0.001)	0.07

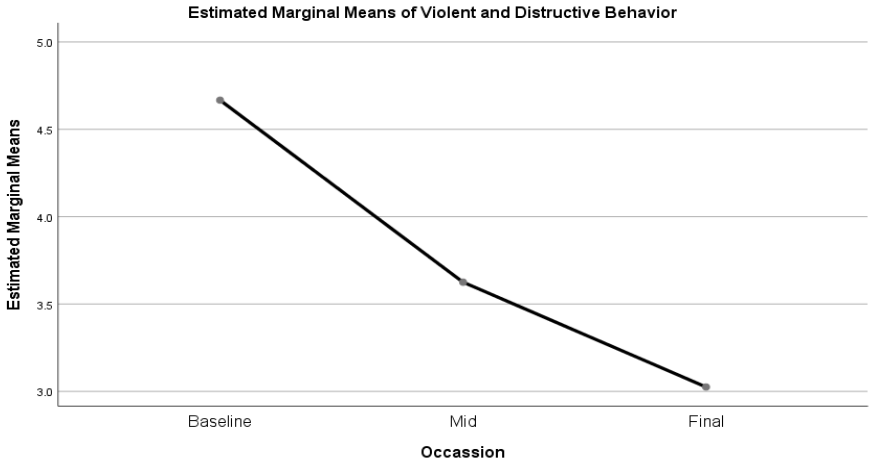

Figure 1. Changes in mean scores for violent and distractive behaviour across assessment occasions.

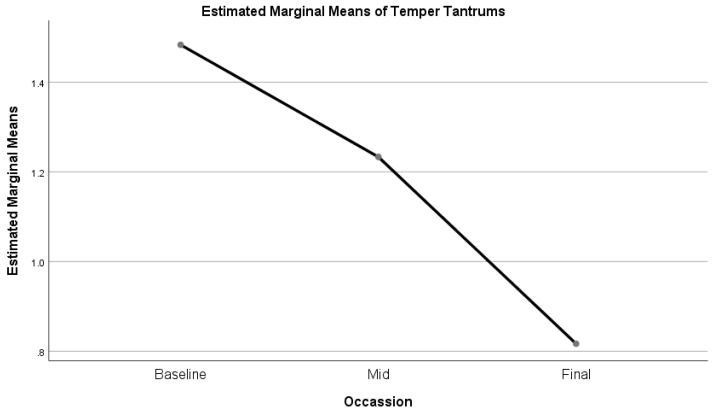

Figure 2. Changes in mean scores for Temper Tantrums across assessment occasions.

Figure 3. Changes in mean scores for Misbehaves with others across assessment occasions.

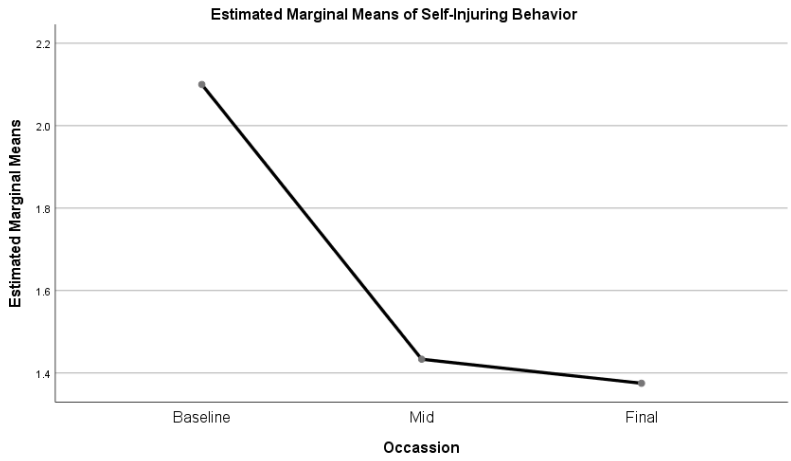

Figure 4. Changes in mean scores for Self-injurious behaviour across assessment occasions

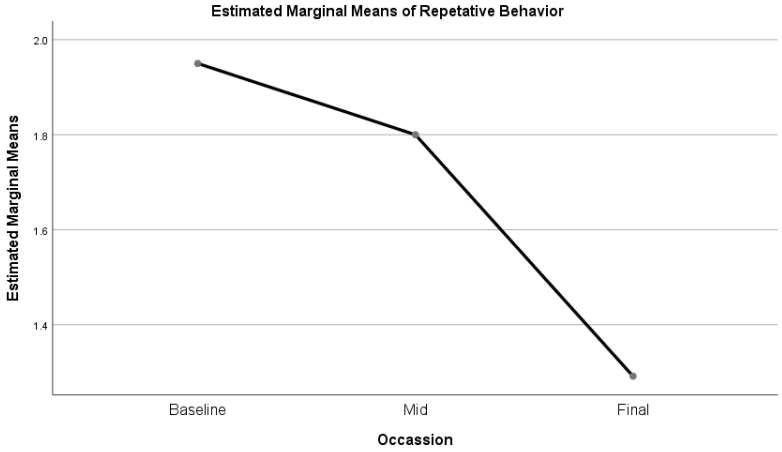

Figure 5. Changes in mean scores for Repetitive Behavior across assessment occasions

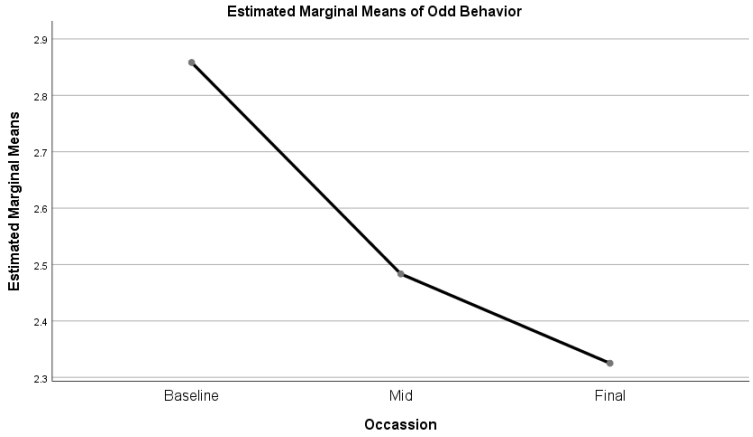

Figure 6. Changes in mean scores for Odd Behavior across assessment occasions

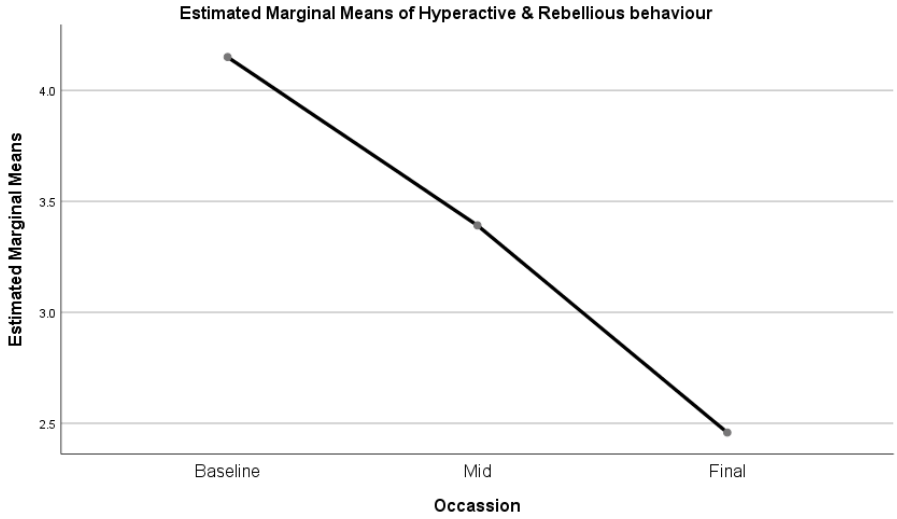

Figure 7. Changes in mean scores for Hyperactive and Rebellious Behavior across assessment occasions

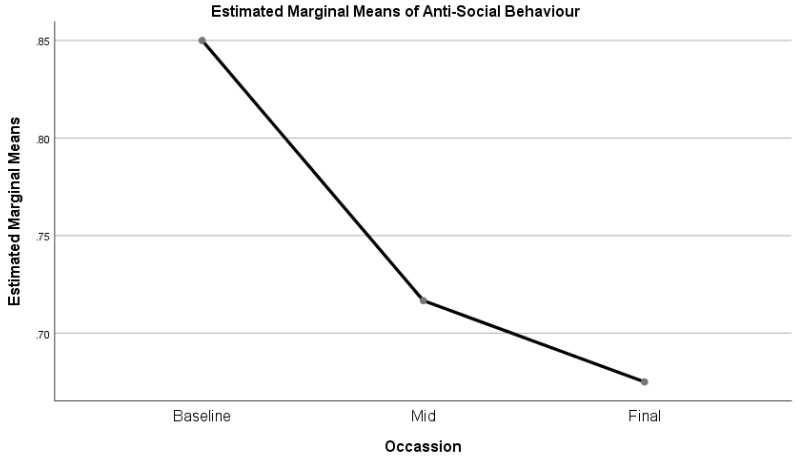

Figure 8. Changes in mean scores for Anti-Social Behaviour across assessment occasions

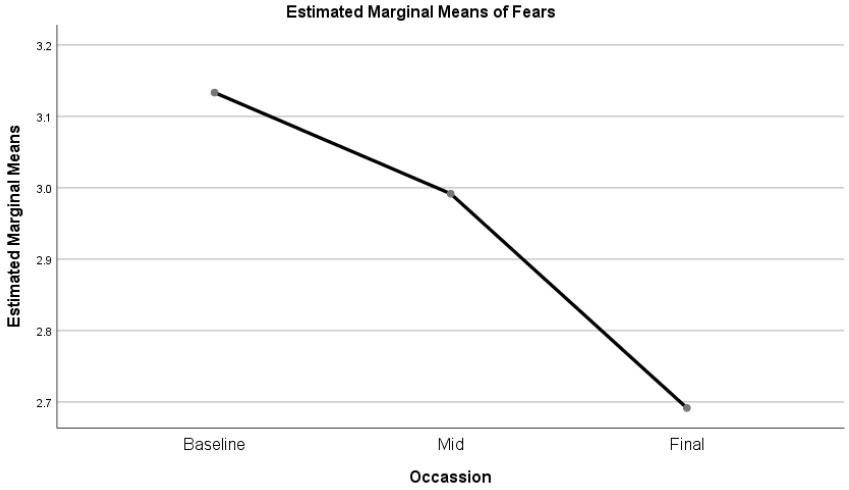

Figure 9. Changes in mean scores for Fear across assessment occasions

It may be seen from Table 1 that significant reductions were observed from baseline to midterm and from baseline to the final assessment across all behavioural domains mentioned in the BASIC MR scale. This reduction indicates meaningful improvement following the intervention.

Significant reduction from baseline to midterm and from baseline to final assessment was observed in violent and destructive behaviour ($p<0.001$), and improvement from mid to final was also evident ($p < .05$), though comparatively minor (Table 1 and Figure 1). A consistent, considerable reduction in temper tantrums was observed across all three comparisons ($p < .001$), with the most considerable cumulative improvement from baseline to final, indicating sustained behaviour regulation over time (Table 1 and Figure 2). A reduction in the domain of "misbehaviour with others" indicates increased interpersonal functioning and social adaptability; results in this domain show significant improvement across all assessment intervals ($p < .01$) (Table 1 and Figure 3). A significant decrease in self-injurious behaviour is observed from baseline to the midterm and from baseline to the final assessment ($p < .001$), with no significant change between the midterm and final evaluations ($p>0.05$) (Table 1 and Figure 4). The lack of change may be due to the maintenance of early gains.

In repetitive behaviour, significant improvement is observed across all comparisons, means there was a decrease in repetitive behaviour, with an impactful effect emerging during the mid- to late-phase ($p < .001$), (Table 1 and Figure 5). This is indicative of gradual behavioural flexibility with continued intervention. The results in the odd behaviour domain also show that a significant improvement is seen in the score between baseline and mid-term evaluation ($p<0.01$) and in the baseline and final evaluation($p<0.05$), but the results between mid-term and the final is not significant ($p>0.05$), (Table 1 and Figure 6). In the hyperactivity and

rebellious behaviours domain, a highly significant reduction is observed across all comparisons ($p < .001$), (Table 1 and Figure 7). The pronounced improvement in this behaviour is a significant change that needs special mention. Antisocial behaviour showed a very modest decrease from baseline to mid-evaluation, with no significant change thereafter, but a significant decrease in antisocial behaviour is observed between the baseline and final evaluations. The moderate decrease in antisocial behaviour is due to the absence of that behaviour among the selected sample, (Table 1 and Figure 8). Similarly, in the domain of fears, there is a substantial decrease in the score, which means there is a significant reduction of fear from baseline to midterm, and midterm to final ($p<0.05$) and from baseline to final($p<0.001$), (Table 1 and Figure 9). Overall, the results indicate that meaningful behavioural improvement occurred.

Discussion

An integrated intervention combining performing arts training and transdisciplinary rehabilitation therapies among adolescents and young adults with intellectual disability was examined for its effectiveness. A significant reduction in several maladaptive behaviours was observed, particularly in domains such as hyperactivity, rebellious behaviour, temper tantrums, and violent or destructive behaviours. The results are consistent with many previous research studies that highlight the effectiveness of structured, creative, and activity-based interventions among individuals with intellectual disabilities.

The structured routines, rhythmic engagement and movements, imitation and mimicking, and social interactions found in performing arts such as music, dance, fine arts, and magic, along with the social opportunities provided daily, contribute to enhancing self-regulation and emotional expression. As reported by Gold, Wigram, and Elefant (2006), music therapy significantly reduces behaviour problems and improves social engagement among individuals with intellectual disability. Similarly, Koch et al. (2019) reported that art forms involving dance and movement enhance emotional regulation and reduce externalising behaviour. These findings support the present study, indicating reduced hyperactivity and temper tantrums. When social opportunities to perform for the mainstream population are provided, they tend to enhance the self-esteem, self-worth, and self-confidence of differently abled people.

There is a positive alignment between the findings on hyperactive and rebellious behaviour and those of Brown and Jellison (2012), who reported that art-based interventions improve attention, impulse control, and compliance with rules. Brown and Jellison (2012) conducted a systematic review of music research involving children and youth with disabilities and reported that arts-based and music interventions often yield positive effects on social engagement and behaviour. These findings align with the present study's observations of reduced hyperactive and rebellious behaviour. Sustained attention, turn-taking, and adherence to sequences are essential for any structured artistic activity. This may be a valid explanation for the substantial improvement observed in this domain. The combined impact of behaviour modification, psychotherapy, and other rehabilitation interventions during the early phase of intervention may account for the reduction in violent, destructive, and self-injurious behaviour. Behavioural interventions grounded in applied behaviour analysis are effective in reducing challenging behaviours among individuals with intellectual disability (Matson & Neal, 2009).

Improved interpersonal behaviour, reduced misbehaviour, and reduced repetitive behaviour enhance social functioning and behavioural flexibility. This may be attributed to opportunities to engage in collaborative art forms such as dance, music, and magic, which facilitate attention and social reciprocity. Above and beyond this, the findings of the present study suggest that the provision of meaningful social opportunities to showcase their talents to the general public and to receive meaningful social appreciation meaningfully impacts the psychosocial factors of these people.

A very modest improvement in antisocial behaviour is observed from baseline to mid-evaluation, with no significant change thereafter. A significant and consistent change is observed in the domain of fear. Often internalised behaviours such as fear and anxiety are better addressed with appropriately targeted interventions involving cognitive or individualised therapeutic approaches. It may be inferred that group-based arts interventions are less effective in addressing deeply rooted emotional difficulties than a more specifically tailored clinical intervention. Addressing deeply rooted emotional and anxiety issues may

respond better to individualised psychological interventions or a combined intervention comprising both performing arts and clinical intervention.

In sum, the findings suggest that holistic, transdisciplinary, art-based rehabilitation, with meaningful social opportunities to showcase talents, may constitute a new, effective model for psychosocial, social, and life skills in individuals with intellectual disability.

People with intellectual disability are a marginalised group, in the context of performing arts, affecting their self-esteem, self-worth and often the meaning and purpose of life. Providing social opportunities for these people often helps elevate their self-esteem and self-worth, thereby instilling a sense of purpose and meaning in life. Moreover, providing social opportunities for these people also helps advocate for and raise awareness of inclusivity and accessibility for them. The most important outcome of providing social opportunities is instilling a well-defined purpose and meaning in their lives, leading to a more productive life.

Conclusion

Significant improvement is seen across all domains of the Basic MR scale, suggesting that social opportunity, combined with conventional therapies, helps enhance self-esteem, self-worth, and find one's purpose and meaning in life. The moderate change in antisocial behaviour is due to the moderate level of that behaviour among the selected sample. The study strongly implies that the provision of social opportunities along with conventional training and therapies to intellectually disabled people impact on the overall development of their social skills and helps in instilling the purpose and meaning of life.

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